Volume 196 1991

Table of contents

No. 1 1–254 issued on February 26, 1991
No. 2 255–530 issued on March 14, 1991
No. 3 531–756 issued on March 28, 1991

Information for Authors 751–756

Review

Structure/function relationship of proteins belonging to the family of receptors coupled to GTP-binding proteins
A. D. Strosberg 1– 10

Nucleic acids, protein synthesis and molecular genetics

Vitamin A intake and *in vivo* expression of the genes involved in retinol transport
G. Perozzi, E. Mengheri, V. Colantuoni and S. Gaetani 211–217

Structure and expression of the attacin genes in *Hyalophora cecropia*
S.-C. Sun, I. Lindström, J.-Y. Lee and I. Faye 247–254

Modification of histidine residues on proteins from the 50S subunit of the *Escherichia coli* ribosome — Effects on subunit assembly and peptidyl transferase centre activity
V. G. Sumpter, W. P. Tate, P. Nowotny and K. H. Nierhaus 255–260

Multiple apomucin translation products from human respiratory mucosa mRNA
J.-M. Perini, N. Vandamme-Cubadda, J.-P. Aubert, N. Porchet, M. Mazzuca, G. Lamblin, A. Herscovics and P. Roussel 321–328

Characterization of the yeast acidic ribosomal phosphoproteins using monoclonal antibodies — Proteins L44/L45 and L44′ have different functional roles
M. D. Vilella, M. Remacha, B. L. Ortiz, E. Mendez and J. P. G. Ballesta 407–414

Functional analysis of the pathogenesis-related 1a protein gene minimal promoter region — Comparison of reporter gene expression in transient and in stable transfections
A. Beilmann, A. J. P. Pfitzner, H. M. Goodman and U. M. Pfitzner 415–421

Induced plant responses to pathogen attack — Analysis and heterologous expression of the key enzyme in the biosynthesis of phytoalexins in soybean (*Glycine max* L. Merr. cv. Harosoy 63)
R. Welle, G. Schröder, E. Schiltz, H. Grisebach and J. Schröder 423–430

Purification and characterisation of plasminogen activator inhibitor 2 produced in *Saccharomyces cerevisiae*
J. Steven, I. R. Cottingham, S. J. Berry, S. A. Chinery, A. R. Goodey, M. Courtney and D. J. Ballance 431–438

cDNA cloning and expression of the mRNA for cytochrome *P*-450$_{kd}$ which shows a fatty acid ω-hydroxylating activity
N. Yokotani, E. Kusunose, K. Sogawa, H. Kawashima, M. Kinosaki, M. Kusunose and Y. Fujii-Kuriyama 531–536

Characterization of the 12S globulin complex of *Brassica napus* — Evolutionary relationship to other 11-12S storage globulins
S. Sjödahl, J. Rödin and L. Rask 617–621

Production and purification of recombinant human interleukin-5 from yeast and baculovirus expression systems
E. Ingley, R. L. Cutler, M.-C. Fung, C. J. Sanderson and I. G. Young 623–629

Protein chemistry and structure

Three-dimensional structure of natural charybdotoxin in aqueous solution by ^{1}H-NMR — Charybdotoxin possesses a structural motif found in other scorpion toxins
F. Bontems, C. Roumestand, P. Boyot, B. Gilquin, Y. Doljansk, A. Menez and F. Toma 19– 28

NMR and circular dichroic studies on the solution conformation of a synthetic peptide derived from the calmodulin-binding domain of *Bordetella pertussis* adenylate cyclase
B. Prêcheur, O. Siffert, O. Bârzu and C. T. Craescu 67– 72

Discrimination between rat thiostatin (T-kininogen) and one of its cystatin-like inhibitory fragments by a monoclonal antibody, and localization of the epitope
G. Lalmanach, A. Adam, T. Moreau, N. Gutman and F. Gauthier 73– 78

Structure of the human brain calcium-binding protein calretinin and its expression in bacteria
M. Parmentier and A. Lefort 79– 85

Amino acid 55 plays a central role in tetramerization and function of *Escherichia coli* single-stranded DNA binding protein
U. Curth, I. Bayer, J. Greipel, F. Mayer, C. Urbanke and G. Maass 87– 93

Molecular cloning and sequence analysis of bovine lactotransferrin
A. Pierce, D. Colavizza, M. Benaissa, P. Maes, A. Tartar, J. Montreuil and G. Spik 177–184

Actin—caldesmon—myosin-subfragment-1 ternary complex viewed by electron microscopy — Competitive actin binding region for caldesmon and myosin subfragment-1
M.-C. Harricane, A. Bonet-Kerrache, C. Cavadore and D. Mornet 219–224

A proton-NMR study of a site-directed mutation (His388 → Glu) in the interdomain region of yeast phosphoglycerate kinase — Implications for domain movement
H. C. Graham, R. J. P. Williams, J. A. Littlechild and H. C. Watson 261–269

The open/closed conformational equilibrium of aspartate aminotransferase — Studies in the crystalline state and with a fluorescent probe in solution
D. Picot, E. Sandmeier, C. Thaller, M. G. Vincent, P. Christen and J. N. Jansonius 329–341

Effect of deletion of the A1 domain of von Willebrand factor on its binding to heparin, collagen and platelets in the presence of ristocetin
J. J. Sixma, M. E. Schiphorst, C. L. Verweij and H. Pannekoek 369–375

Chemical modification and ^{1}H-NMR studies on the receptor-binding region of human interleukin 6
C. Nishimura, T. Ekida, S. Masuda, K. Futatsugi, S.-i. Itoh, K. Yasukawa, T. Kishimoto and Y. Arata 377–384

Functional residues at the active site of aminopeptidase N
A. Helene, A. Beaumont and B. P. Roques 385–393

Differences in primary structure among five phospholipases A_2 from *Heloderma suspectum*
A. Vandermeers, M.-C. Vandermeers-Piret, L. Vigneron, J. Rathe, M. Stievenart and J. Christophe 537–544

Observation of a stable intermediate form in the reaction of human hemoglobin with carbon monoxide
M. Coletta and G. Geraci 569–573

Isolation of human type X collagen and immunolocalization in fetal human cartilage
T. Kirsch and K. von der Mark 575–580

The amino acid sequence of peanut agglutinin
N. M. Young, R. A. Z. Johnston and D. C. Watson 631–637

Binding and toxicity of apamin — Characterization of the active site
C. Labbé-Jullié, C. Granier, F. Albericio, M.-L. Defendini, B. Ceard, H. Rochat and J. Van Rietschoten 639–645

Characterization of sequences involved in mediating degradation of ornithine decarboxylase in cells and in reticulocyte lysate
Y. Rosenberg-Hasson, Z. Bercovich and C. Kahana 647–651

A spectroscopic analysis of the Pro35 → Ala mutant of *Rhodobacter capsulatus* cytochrome c_2 — The strictly conserved Pro35 is not structurally essential
P. R. Gooley, M. S. Caffrey, M. A. Cusanovic and N. E. Mackenzie 653–661

^{15}N- and ^{13}C-NMR investigations of glucose oxidase from *Aspergillus niger*
C. Sanner, P. Macheroux, H. Rüterjans, F. Müller and A. Bacher 663–672

Monoclonal antibodies that inhibit binding of propolypeptide of von Willebrand factor to collagen — Localization of epitopes
T. Fujisawa, J. Takagi, F. Sekiya, A. Goto, E. Miake and Y. Saito 673–677

Domain structure and interaction within the pentafunctional arom polypeptide
A. R. Hawkins and M. Smith 717–724

Determination of disulfide bridges in natural and recombinant insect defensin A
P. Lepage, F. Bitsch, D. Roecklin, E. Keppi, J.-L. Dimarcq, J.-M. Reichhart, J. A. Hoffmann, C. Roitsch and A. Van Dorsselaer 735–742

Primary structure of a new actin-binding protein from human seminal plasma
J. Schaller, K. Akiyama, H. Kimura, D. Hess, M. Affolter and E. E. Rickli 743–750

Enzymology

Immunology, biosynthesis and *in vivo* assembly of the branched-chain 2-oxoacid dehydrogenase complex from bovine kidney
G. H. D. Clarkson and J. G. Lindsay 95–100

Cellobiose oxidase from *Phanerochaete chrysosporium* can be cleaved by papain into two domains
G. Henriksson, G. Pettersson, G. Johansson, A. Ruiz and E. Uzcategui 101–106

Protein *O*-glycosylation in *Saccharomyces cerevisiae* — Purification and characterization of the dolichyl-phosphate-D-mannose-protein *O*-D-mannosyltransferase
S. Strahl-Bolsinger and W. Tanner 185–190

Yeast fructose-2,6-bisphosphate 6-phosphatase is encoded by *PHO8*, the gene for nonspecific repressible alkaline phosphatase
U. Plankert, C. Purwin and H. Holzer 191–196

Mobility of the spin-labeled side chains of some novel antifolate inhibitors in their complexes with dihydrofolate reductase
R. L. Blakley, J. R. Piper, G. Maharaj, J. R. Appleman, T. J. Delcamp, J. H. Freisheim, R. F. Kulinski and J. A. Montgomery 271–280

Hydrolysis of intact and Cys-Phe-cleaved human atrial natriuretic peptide *in vitro* by human tissue kallikrein
Y. Vanneste, A. Michel and M. Deschodt-Lanckman 281–286

Mutation of a negatively charged amino acid in thioredoxin modifies its reactivity with chloroplastic enzymes
F. de Lamotte-Guéry, M. Miginiac-Maslow, P. Decottignies, M. Stein, P. Minard and J.-P. Jacquot 287–294

N-Butyl-*N*-methyl-4-nitrophenyl carbamate as a specific active site titrator of bile-salt-dependent lipases
J.-D. Fourneron, N. Abouakil, C. Chaillan and D. Lombardo 295–303

Preparation and kinetic properties of 5-ethylphenazine–poly(ethylene-glycol)–glutamate-dehydrogenase conjugate — A semisynthetic NADH oxidase
T. Yomo, I. Urabe and H. Okada 343–348

Characterization of a murine β1-4galactosyltransferase expressed in COS-1 cells
K. Nakazawa, K. Furukawa, A. Kobata and H. Narimatsu 363–368

12α-Hydroxysteroid dehydrogenase from *Clostridium* group P, strain C 48-50 — Production, purification and characterization
M. Braun, H. Lünsdorf and A. F. Bückmann 439–450

Methanol esterification reactions catalyzed by snake venom and bovine intestinal 5'-nucleotide phosphodiesterases — Formation of nucleoside 5'-monophosphate methyl esters from guanosine 5'-triphosphate and other nucleoside 5'-polyphosphates
M. Garcia-Diaz, M. Avalos and J. C. Cameselle 451–457

Glutamate dehydrogenase from the thermoacidophilic archaebacterium *Sulfolobus solfataricus*
V. Consalvi, R. Chiaraluce, L. Politi, A. Gambacorta, M. De Rosa and R. Scandurra 459–467

Isolation and characterization of catalytic and calmodulin-binding domains of *Bordetella pertussis* adenylate cyclase
H. Munier, A.-M. Gilles, P. Glaser, E. Krin, A. Danchin, R. Sarfati and O. Bârzu 469–474

Activation and induction by copper of Cu/Zn superoxide dismutase in *Saccharomyces cerevisiae* — Presence of an inactive proenzyme in anaerobic yeast
F. Galiazzo, M. R. Ciriolo, M. T. Carrì, P. Civitareale, L. Marcocci, F. Marmocchi and G. Rotilio 545–549

Characterization of a new cobalt-containing nitrile hydratase purified from urea-induced cells of *Rhodococcus rhodochrous* J1
T. Nagasawa, K. Takeuchi and H. Yamada 581–589

Removal of *N*-acetyl groups from blocked peptides with acylpeptide hydrolase — Stabilization of the enzyme and its application to protein sequencing
T. C. Farries, A. Harris, A. D. Auffret and A. Aitken 679–685

Enzyme-mediated peptide synthesis using acylpeptide hydrolase
T. C. Farries, A. D. Auffret and A. Aitken 687–692

Class π glutathione *S*-transferase from pig lung — Purification, biochemical characterization, primary structure and crystallization
H. W. Dirr, K. Mann, R. Huber, R. Ladenstein and P. Reinemer 693–698

Purification and characterization of a plant peroxisomal Δ^2,Δ^3-enoyl-CoA isomerase acting on 3-*cis*-enoyl-CoA and 3-*trans*-enoyl-CoA
K. Engeland and H. Kindl 699–705

Carbohydrates, lipids and other natural products

Exopolysaccharide structure from *Bacillus circulans*
T. Fontaine, J.-M. Wieruszeski, F. Talmont, M.-H. Saniez, P. Duflot, J.-B. Leleu and B. Fournet 107–113

Primary structure of O-linked carbohydrate chains in the cellulosome of different *Clostridium thermocellum* strains
G. J. Gerwig, J. P. Kamerling, J. F. G. Vliegenthart, E. Morag (Morgenstern), R. Lamed and E. A. Bayer 115–122

Core region of *Citrobacter* O23 lipopolysaccharide — Structure elucidation by chemical methods, gas chromatography/mass spectrometry and NMR spectroscopy at 500 MHz
E. Katzenellenbogen, A. Gamian, E. Romanowska, U. Dabrowski and J. Dabrowski 197–201

Development of monoclonal antibodies against different protein and carbohydrate epitopes of dipeptidyl peptidase IV from rat liver plasma membranes
S. Hartel-Schenk, N. Loch, M. Zimmermann and W. Reutter 349–355

Separation of the poly(glycerophosphate) lipoteichoic acids of *Enterococcus faecalis* Kiel 27738, *Enterococcus hirae* ATCC 9790 and *Leuconostoc mesenteroides* DSM 20343 into molecular species by affinity chromatography on concanavalin A
K. Leopold and W. Fischer 475–482

Physical and inorganic biochemistry

A characterization of copper/zinc superoxide dismutase mutants at position 124 — Zinc-deficient proteins
L. Banci, I. Bertini, D. E. Cabelli, R. A. Hallewell, J. W. Tung and M. S. Viezzoli 123–128

Visible, EPR and electron nuclear double-resonance spectroscopic studies on the two metal-binding sites of oxovanadium (IV)-substituted D-xylose isomerase
R. Bogumil, J. Hüttermann, R. Kappl, R. Stabler, C. Sudfeldt and H. Witzel 305–312

Conformational fluctuations and protein reactivity — Determination of the rate-constant spectrum and consequences in elementary biochemical processes
D. Lavalette, C. Tetreau, J.-C. Brochon and A. Livesey 591–598

Membranes and bioenergetics

H^+-translocating inorganic pyrophosphatase of plant vacuoles — Inhibition by Ca^{2+}, stabilization by Mg^{2+} and immunological comparison with other inorganic pyrophosphatases
M. Maeshima 11–17

A peptide-sensitive channel of large conductance is localized on mitochondrial outer membrane
J.-F. Chich, D. Goldschmidt, M. Thieffry and J.-P. Henry 29–35

Two functional Na^+/K^+-ATPase isoforms in the left ventricle of guinea pig heart
I. Berrebi-Bertrand, J.-M. Maixent, F. G. Guede, A. Gerbi, D. Charlemagne and L. G. Lelievre 129–133

Investigation of the membrane-active peptides melittin and glucagon by photochemically induced dynamic-nuclear-polarization (photo-CIDNP) NMR
T. Maurer, C. Lücke and H. Rüterjans 135–141

ATP synthesis in chromatophores driven by artificially induced ion gradients
P. Turina, B. A. Melandri and P. Gräber 225–229

Activation and binding volumes of the sarcoplasmic reticulum transport enzyme activated by calcium or strontium
S. Stephan and W. Hasselbach 231–237

Comparison of the membrane transport of anthracycline derivatives in drug-resistant and drug-sensitive K562 cells
F. Frezard and A. Garnier-Suillerot 483–491

The ATPase of *Bacillus alcalophilus* – Reconstitution of energy-transducing functions
A. Hoffmann and P. Dimroth 493–497

Membrane insertion of the pore-forming domain of colicin A – A spectroscopic study
J. H. Lakey, D. Massotte, F. Heitz, J.-L. Dasseux, J.-F. Faucon, M. W. Parker and F. Pattus 599–607

Metabolism and metabolic regulation

Single administration of hepatotoxic chemicals transiently decreases the gap-junction-protein levels of connexin 32 in rat liver
T. Miyashita, A. Takeda, M. Iwai and T. Shimazu 37– 42

The mechanism of Ca^{2+}-related control of gluconeogenesis in perfused liver
A. Sterniczuk, S. Hreniuk, R. C. Scaduto Jr and K. F. LaNoue 143–150

Effect of phenylephrine on pyruvate dehydrogenase in fasting rat livers
A. Sterniczuk, S. Hreniuk, R. C. Scaduto Jr and K. F. LaNoue 151–157

Deoxyribonucleotide metabolism in hydroxyurea-resistant V79 hamster cells
L. Höglund, E. Pontis and P. Reichard 239–245

Effects of monocyte-lymphocyte interaction on the synthesis of leukotriene B_4
P.-J. Jakobsson, B. Odlander and H.-E. Claesson 395–400

Effect of dietary fish oil and corn oil on lipid metabolism and apolipoprotein gene expression by rat liver
A. Ribeiro, M. Mangeney, P. Cardot, C. Loriette, Y. Rayssiguier, J. Chambaz and G. Bereziat 499–507

Different isoforms of an apoprotein (apolipophorin III) associate with lipoproteins in *Locusta migratoria*
D. J. Van Der Horst, J. M. Van Doorn, H. Voshol, M. R. Kanost, R. Ziegler and A. M. T. Beenakkers 509–517

Long-chain acyl-CoA synthetase and very-long-chain acyl-CoA synthetase activities in peroxisomes and microsomes from rat liver – An enzymological study
W. Lageweg, R. J. A. Wanders and J. M. Tager 519–523

Eicosanoid-mediated increase in glucose and lactate output as well as decrease and redistribution of flow by complement-activated rat serum in perfused rat liver
W. Muschol, G. P. Püschel, M. Hülsmann and K. Jungermann 525–530

Signal transduction and molecular neurobiology

Kinetics of inositol 1,4,5-trisphosphate and inositol 1,3,4,5-tetrakisphosphate generation in dog-thyroid primary cultured cells stimulated by carbachol
B. Verjans, C. Erneux, E. Raspe and J. E. Dumont 43– 49

Immunolocalization of cytochromes *P*-450olf1 and *P*-450olf2 in rat olfactory mucosa
K. Zupko, Y. Poria and D. Lancet 51– 58

A second gene product of the inositol-phospholipid-specific phospholipase Cδ subclass
E. Meldrum, R. W. Kriz, N. Totty and P. J. Parker 159–165

Treatment of intact striatal neurones with cholera toxin or 8-bromoadenosine 3',5'-(cyclic)-phosphate decreases the ability of pertussis toxin to ADP-ribosylate the α-subunits of inhibitory and other guanine-nucleotide-binding regulatory proteins, G_i and G_o – Evidence for two distinct mechanisms
M. Maus, V. Homburger, J. Cordier, C. Pantaloni, J. Bockaert, J. Glowinski and J. Prémont 313–320

Expression of three human β-adrenergic receptor subtypes in transfected chinese hamster ovary cells
K. M. Tate, M.-M. Briend-Sutren, L. J. Emorine, C. Delavier-Klutchko, S. Marullo and A. D. Strosberg 357–361

Dictyostelium cells produce platelet-activating factor in response to cAMP
F. Bussolino, C. Sordano, E. Benfenati and S. Bozzaro 609–615

Activation of signal-transducing guanine-nucleotide-binding regulatory proteins by guanosine 5'-[γ-thio]triphosphate – Information transfer by intermediately thiophosphorylated $\beta\gamma$ subunits
T. Wieland, I. Ulibarri, P. Gierschik and K. H. Jakobs 707–716

Identification of the major protein phosphatases in mammalian cardiac muscle which dephosphorylate phospholamban
L. K. MacDougall, L. R. Jones and P. Cohen 725–734

Molecular cell biology

NADPH–cytochrome *c* reductase from rabbit peritoneal neutrophils – Purification, properties and function in the respiratory burst
F. Laporte, J. Doussiere, V. Mechin and P. V. Vignais 59– 66

Processing of the precursor of protamine P2 in mouse – Identification of intermediates by their insolubility in the presence of sodium dodecyl sulfate
S. M. Elsevier, J. Noiran and D. Carre-Eusebe 167–175

Primary structure of toad sperm protamines and nucleotide sequence of their cDNAs
K. Takamune, H. Nishida, M. Takai and C. Katagiri 401–406

Regulation of *S*-adenosylmethionine decarboxylase in L1210 leukemia cells — Studies using an irreversible inhibitor of the enzyme
R. Autelli, L. Stjernborg, A. R. Khomutov, R. M. Khomutov and L. Persson 551–556

High-mobility-group proteins P1, I and Y as substrates of the M-phase-specific $p34^{cdc2}$/$cyclin^{cdc13}$ kinase
L. Meijer, A.-C. Ostvold, S. I. Walaas, T. Lund and S. G. Laland 557–567

Developmental biochemistry and immunology

Biochemical, cytotoxic and pharmacokinetic properties of an immunotoxin composed of a mouse monoclonal antibody Fib75 and the ribosome-inactivating protein α-sarcin from *Aspergillus giganteus*
E. J. Wawrzynczak, R. V. Henry, A. J. Cumber, G. D. Parnell, E. J. Derbyshire and N. Ulbrich 203–209

Indexed in *Current Contents*